What is claimed is:

1. A method for forming a bearing apparatus comprising:

providing a roller bearing having an inner ring with an inner circumferential surface, an inner ring radial end surface, and a chamfered corner having a chamfer radius X2 and extending from an inner circumferential surface end point to said inner ring radial end surface;

providing a hollow shaft body having:

a shaft end;

an internal splined portion having a spline pitch diameter y1 and extending to toward said shaft end to a spline portion end point; and

a spline free portion having a thickness y2 extending from said spline portion end point to said shaft end;

calculating a distance $X1 > X2(y1/y2)$;

positioning said inner ring on said hollow shaft such that said inner circumferential surface end point is distanced from said spline portion end point toward said shaft end by the distance X1; and

swaging said hollow shaft outward from a bending starting point aligned with said inner circumferential surface end point to said shaft end to fix said inner ring.

2. The method according to claim 1, wherein said roller bearing is a double row angular contact ball bearing with vertices of contact angles outside of the roller bearing.